

## **TRANSLATION OF ANNEXES TO IPER**

**International Application No. PCT/EP2004/008419**

**Attorney Docket No.: 8009-88050**

Patent Claims

1. A method for supporting the driver of a vehicle during an emergency braking process in order to prevent the vehicle from colliding with an object which is located in a detection zone in front of the vehicle in the direction of travel, in particular a preceding vehicle, in which braking means (70) of the vehicle (50) for carrying out the emergency braking process are actuated independently of the driver if a predefined emergency braking condition (16) is met, emergency braking information to the driver of the vehicle (50) being issued when the emergency braking condition (16) is met, and in which information to the driver is issued even when the emergency braking condition (16) is not met, said information informing the driver of the vehicle (50) about the current situation in the surroundings or the traffic situation in the detection zone (54), the information to the driver being adjusted as a function of one or more predefined information conditions (14, 17, 18) being met, characterized in that the braking means (70) of the vehicle (50) for carrying out the emergency braking process are actuated independently of the driver if it is detected that a driver wishes to carry out the emergency braking process, and in that a positional variable which describes a spatial position ( $x_i$ ,  $y_i$ ) of the respective object (i) in relation to the vehicle (50) and/or a relative speed variable which describes a relative speed ( $v_{rel,i}$ ) between the vehicle (50) and the respective object (i) is determined for each of the objects (i) located in the detection zone (54), in which case by evaluating the positional variables and/or relative speed variables which are determined those objects which constitute obstacles for the vehicle (50) with respect to its driving course are determined from the totality of the detected objects (i).

2. The method as claimed in claim 1, characterized in that by evaluating the positional variables and/or relative speed variables which are associated with the obstacles, that obstacle (j) which has the greatest  
5 relevance for a collision of the vehicle (50) is determined.

3. The method as claimed in one of claims 1 to 2, characterized in that the emergency braking condition  
10 (16) is predefined as a function of the determined positional variable and/or the determined relative speed variable.

4. The method as claimed in one of claims 1 to 3,  
15 characterized in that the information conditions (14, 17, 18) are predefined as a function of the determined positional variable and/or the determined relative speed variable.

20 5. The method as claimed in one of claims 1 to 4, characterized by visual and/or acoustic and/or haptic information to the driver.

6. The method as claimed in one of claims 1 to 5,  
25 characterized in that a driver's wish to carry out the emergency braking process is determined by evaluating the activation of a brake operator control element (71) which is provided to enable the driver to influence the braking means (70) of the vehicle (50).

30 7. The method as claimed in one of claims 1 to 6, characterized in that a driver's wish to carry out the emergency braking process is determined by evaluating the activation of a driving operator control element (74)  
35 which is provided to enable the driver to influence drive means (73) of the vehicle (50).

8. The method as claimed in one of claims 1 to 7, characterized in that the emergency braking process is carried out with the objective of bringing about a predefined safety distance ( $s_0$ ) between the vehicle (50) and object (i) and/or a predefined relative speed ( $v_{rel,0}$ ) between the vehicle (50) and object (i).

9. A device for supporting the driver of a vehicle during an emergency braking process in order to prevent the vehicle from colliding with an object which is located in a detection zone in front of the vehicle in the direction of travel, in particular a preceding vehicle, in which braking means (70) of the vehicle (50) are actuated independently of the driver in order to carry out the emergency braking process if an evaluation unit (60) detects that a predefined emergency braking condition (16) is met, with the evaluation unit (60) causing emergency braking information to be issued to the driver of the vehicle (50) when the emergency braking condition (16) is met, and in which the evaluation unit (60) causes information to the driver to be issued even when the emergency braking condition (19) is not met, said emergency braking condition (19) informing the driver of the vehicle (50) about the current situation in the surroundings or the traffic situation in the detection zone (54), the evaluation unit (60) adjusting the information to the driver as a function of one or more predefined information conditions (14, 17, 18) being met, characterized in that the braking means (70) of the vehicle (50) for carrying out the emergency braking process are actuated independently of the driver if the evaluation unit (60) detects that a driver wishes to carry out the emergency braking process, and in that the evaluation unit (60) determines a positional variable which describes a spatial position ( $x_i, y_i$ ) of the respective object (i) in relation to the vehicle (50) and/or a relative speed variable which describes the

relative speed ( $v_{rel,i}$ ) between the vehicle (50) and the respective object (i) for each of the objects (i) located in the detection zone (54), in which case, by evaluating the positional variables and/or relative speed variables  
5 which have been determined the evaluation unit (60) determines those objects which constitute obstacles for the vehicle (50) with respect to its driving course from the totality of the detected objects (i).